5 Funding Approach

How will this initiative be funded?

5.1 Enumeration of Funding Possibilities

5.1.1 Funding Options across the Country

As Maine develops an approach for funding the Maine Public Library of Geographic Information it is instructive to study how other states fund their GIS programs. The information in this section of the report builds upon research conducted by Dr. Lisa Warnecke for the states of Maine and Ohio. Dr. Warnecke recommended States whose approaches were most transferable to the situation in Maine, and research was conducted through a number of phone calls and emails to other state GIS coordinators, as well as Internet based research.

There are a handful of approaches in place across the country to fund GIS. States typically employ more than one of these approaches to fund a suite of functions and services. These generally include the following:

- **Dedicated funding** – a specific source of revenue that provides a constant and guaranteed funding stream for some or all aspects if GIS, typically established by Legislative action. Examples include land transfer fees, lottery receipts, and bonds dedicated for GIS.
- **Mission driven funding** – funding to support a defined government function or a specific project for which GIS technology may be used as a resource or tool to support this mission through enhanced analysis capabilities or to perform a task more efficiently. The sources of funding can be of any kind used by government. These sources may include bond funds, CIO (Chief Information Officer) funds, cooperative funding partnerships and federal grants or matching funds.
- **Assessments on agencies** – a charge on some or all state agencies to support central and coordinating GIS functions. Examples include memoranda of understanding, service level agreements, and assessments.
- **Central and capital IT funding** – funds that are used for GIS, but are derived from a state's already established mechanisms to support central government functions, such as information technology (IT) operations or various administrative services. These types of funds are, in effect, a specific type of dedicated funds.
- **Cost recovery** – monies received from the sale of hard copy maps or other products. User fees are an example of cost recovery.

See Table 5.1 for a summary of the pros and cons of each type of funding. Various types of potential funding vehicles are discussed below in Section 5.1.2.

Table 5.1 – Funding Type Matrix

Type of Funding[15]	Explanation	Advantages	Disadvantages	States
Dedicated Funds (Includes options such as land transfer fees, license fees, permit charges)	A dedicated source of revenue that provides a constant funding stream. States may use a special tax or fee to produce funds	• Long term source of funding is guaranteed • GIS program becomes recognized as part of state government • Inspires confidence in GIS products and assurance that GIS resources will exist in the future • GIS staff can develop and implement long term strategy without having to continually secure funding support • Able to focus on development and maintenance of important data sets, rather than the data sets that are "funded" • Ability to provide GIS guidance and assistance over the long term	• Difficult to implement, especially in times of economic strain • Typically requires legislative action and political clout to implement • May be difficult to garner support for a statewide initiative from local, county and town level officials and other stakeholders	WI OR VT
Mission Driven Funding (Bond initiative and Federal grants would fall in this category)	Funding for a government function that provides support for GIS to assist in meeting this mission or a specific project	• Certain topics (public safety, conservation, land planning, economic development) are popular with voters and policy makers and good "drivers" for GIS, thus facilitating availability of funding to support data development to support these missions • Specific Legislative of Gubernatorial action not required for GIS if mission has broad funding support • Can be easier to justify, secure, and maintain funding over time than other approaches • Data and applications development can be funded to support specific missions • Can institutionalize GIS as a part of regular business processes and relationships (such as between state and local governments)	• Funding may not be available for ongoing system maintenance and management. • Risk of skewing statewide GIS development plans to meet a specific mission • Risk of focusing too much on a specific data sets to support a specific mission • Support for certain types of missions may be dependent on certain policies, programs or politicians, and when no longer supported, mission funding may cease • Declining economic conditions may lead to declining support for certain types of missions	ME (E911) OR (E911) VA (E911) AR MA (with Community Preservation) MI TN KS
Assessments on Agencies	Assessments on some or all state agencies to support central GIS functions, or collaboration of a few leading	• Can institutionalize and distribute support for statewide GIS coordination activities among several agencies • Distributes costs for statewide GIS activities	• May require support from key policy staff to institutionalize • Will require support of the Budget Director	KY MD ME (thru Service Level Agreements)

[15] This table is based upon the report "Final Best Practices Report for the Ohio Spatial Data Cost-Benefit Analysis" by Dr. Lisa Warnecke, GeoManagement Associates, Inc., and T. James Fries and Annie Metcalf, PlanGraphics, Inc., October 31, 2001

Type of Funding[15]	Explanation	Advantages	Disadvantages	States
	state agencies for specific multiagency GIS projects	among multiple agencies • Ensures supporting agencies have input to statewide GIS activities • Specific Legislative or Gubernatorial action not necessary if policy staff are supportive • Facilitates a coordinated GIS effort among state agencies • Provides an avenue for many statewide agencies to become familiar with GIS activities and products, which can lead to additional agencies' support and projects • Multiagency support can serve as an endorsement for statewide GIS activities and can lead to additional funding through other approaches	• May require cumbersome record keeping in order to satisfy the many state agencies involved • Will require complicated logistics to get many different state agencies to buy in • Requires annual or biennial budget review with risk of diminished funding and frequent changes in funding level • Agency competition may occur as agencies demand certain levels of service and may not contribute proportionate funding levels • Not clear who pays for the coordination activity itself	MI NC
Central and Capital IT Funding	Allocation from existing central government funding mechanism (such as information technology) as useful for GIS	• May only require support of a few policy staff (such as state CIO), and usually not Legislative of Gubernatorial action • Relatively east to implement logistically while often equitably distributing costs among multiple state agencies • May provide dedicated funding support that can be extended over more than one year • Once in place, funding levels should remain relatively stable over time	• Requires significant political and policy activities to garner support for funding • Requires the support of officials who may be voted out of office • Agencies may have limited formal input into GIS activities	MA AR TX KS
Cost Recovery	Funding received from contractual services or from the sale of hard copy maps or other products; Offer most data for no cost but charge for "premium services"	• May create public/private partnerships to operate web services (and data access services) at no cost to the state • Funds are applied specifically for services and products that have been agreed upon in advance • Funds can be carried over from one fiscal year into the next • May be used to fund specialized staff	• State laws may limit some states' ability to use some aspects of this approach • Organizations with the most funding receive the best services thus developed data may not meet statewide needs • May fragment GIS support and ability to meet statewide needs	AR MN NC UT

Type of Funding[15]	Explanation	Advantages	Disadvantages	States
		• Is not necessarily dependent on politics or policy	• Limits data development and data access to those organizations with funding • Reinforces the divide between the "haves" and "have-nots" based on financial resources • Funding may not be available for ongoing system maintenance and management • Risk of skewing statewide GIS development plans to fulfill funded rather that priority statewide data and needs	

- Long term funding support is necessary to support full time staff. Funding from bonds and/or grants is not an appropriate, or possible, solution to fund staff. Full time staff are necessary to ensure the GIS program has stability and longevity.
- For special projects such as specialized data set development, specific applications, and one-time investments in hardware and software, another potential funding source is grants from Federal Agencies or other sources. A more detailed list of Federal funding sources for GIS is included below in Section 5.1.2.
- To build up the library of digital data, it is advisable to encourage the use of GIS by municipalities and counties. A well-staffed statewide GIS organization could foster local GIS development by providing assistance, data, and other support to municipalities and counties to develop applications to meet local needs and help in pursuing external assistance such as from ESRI®, the National Association of Counties (NACo), local, and other sources to support data development and other local GIS needs.

5.1.2 Potential funding vehicles available in Maine

The following provides a catalog of the funding vehicles that are potentially available in Maine. Whenever possible, reference has been made to other states that use these particular funding vehicles. While these represent what is possible, it is important to note that this list does **not** imply that there was consensus among the Resolve 23 Steering Committee members on whether any of these vehicles is appropriate for Maine. Section 5.2.4 represents the Steering Committee's recommendation on a particular funding approach going forward.

- **Bond Funds** – Requests can be made to the State Legislature to authorize a bond initiative. The initiative then goes before the public who votes to approve or disapprove. Bond funding cannot be used to fund state employee salaries in Maine. However, it can be used to hire consultants, purchase hardware, software and data, and develop grant programs for municipalities.
- **CIO Funds** – This funding source is a type of central and capital funding. The CIO's Strategic Plan project (recently completed by Gartner Group) included GIS as "endeavor project" with statewide benefits. Two projects have been presented, "Making GIS more Accessible and Easier to Use", and "Developing Master Road Centerline GIS Database". The CIO will be going to the legislature to obtain funding for these initiatives as well as all other "endeavor projects". Although GIS is recognized as a priority, due to the importance and magnitude of other strategic IT needs, there may not be any funding available for GIS this year. Several other state CIOs provide some funding for GIS coordination. These states include ***Arkansas, Colorado, Idaho, Indiana, Kansas, Nebraska, North Dakota, Texas, Washington and Wyoming.***

- **General Funds** – General funds are appropriated by the State Legislature. This is a desirable source of funding for ongoing costs associated with a state wide GIS program to cover staff, software upgrades and fees, hardware maintenance and consumable items. It can be difficult and competitive to gain the support necessary to obtain general fund money since all state programs compete for these funds. These difficulties will be compounded during the current budget cycle where there will be statewide funding cutbacks. ***Minnesota*** uses general revenue funds to support the GIS activities of state agencies. This type of funding works well for ongoing programs but is difficult to obtain for new initiatives. ***Kentucky's*** statewide digital basemep development project was funded, in part, as a capital project from the general fund.

- **Fees and Surcharges** – Funds are raised by imposing an additional fee or surcharge on a service or license provided by the state. In order for this approach to be successful, the transaction costs associated with collecting and administering the funds must be less than the amount of funds collected, and the amount collected must contribute significantly to the financial needs for which it is collected. In addition, it is important to understand that there could be significant difficulty in gaining support from the sectors impacted by a particular fee increase. Examples of this approach are presented below:

    - Recording Fee for Land related documents – This is a fee charged on the official recording of land transfers. In ***Wisconsin,*** this fee is collected by each County's Registrar of Deeds in order to generate funding to assist in the development and maintenance of automated land records information systems. Authorized by the Legislature, Wisconsin has raised $70 million over the last decade to fund this modernization program. Most of the generated funds are retained by counties, while some of the receipts are transferred to the state to help fund local and statewide needs. This initiative has been deemed successful in modernizing land records, catalyzing local GIS activities and private sector GIS business, and lowering title insurance costs. The logic of this fee is that it imposes a cost on new property owners to help in modernizing land recordation systems, which is a key data resource for local government GIS. ***Illinois*** recently amended their Counties Code to allow the county board of a county that maintains a GIS to collect an additional $3 on filings. Funds collected under this code must be used to implement and maintain a GIS.

    - Real Estate Transfer Fee – This is a fee that is charged on all real estate transfers in the state. Potentially a surcharge could be added to this fee to provide a funding stream for GIS. ***Oregon*** charges a $1 per transfer to fund the development of statewide parcel data.

    - Surcharge on permits (building, plumbing, etc.) – This type of charge would impose an extra fee in addition to the cost of a permit. The logic of this fee is that it imposes a cost on activities such as new

development that appropriate local, regional and state departments and agencies can better track and manage with GIS.

- Surcharge on licenses (real estate, professional engineers, etc.) – This type of charge would impose an extra fee in addition to the annual cost of maintaining a professional license in Maine. The logic of this charge is that it will impose a cost on those professions that will benefit from the existence of a statewide GIS program.
- Utilities Surcharges Municipalities may franchise local utilities, such as Cable TV and charge a licensing fee as part of the franchise process. Funds from this fee could be used to support GIS activities.

- **Lottery Funds** – The State Legislature would need to approve the allocation of a certain percentage of lottery revenues, or a new lottery program, for GIS. For example, in ***Colorado***, a set percentage of lottery money is allocated to Great Outdoors Colorado, which can expend the money on GIS efforts and grant programs. ***Minnesota's*** Legislative Commission on Minnesota Resources (LCMR) has funded much data development through state lottery funds.

- **User fees** – User fees would be charged in return for some added service or value beyond the delivery of public information. For example, customized information delivery or access to application functionality could be charged for in order to cover the cost of developing and maintaining the service. The challenge with this approach is determining a fee level that does not discourage the use of the service, but that is high enough to recover costs. This approach works best if there is a high demand for the service, and the service is not too costly to deliver.

- **Service Level Agreements, Agency Assessments, and Contracts** – Agencies requiring GIS services are assessed an agreed upon amount in return for specific services and/or statewide coordination efforts. Some state GIS organizations work on a contract basis, supporting other state agencies or federal projects. Contracts are generally for specific projects and carry a specific budget.
  - Enterprise Network Services Rate – The Steering Committee has received preliminary approval for an increase in the assessment on state agencies for the Enterprise Network Services, most likely in the form of an increase to the per computer charge. The Enterprise Network Services Rate is a charge that covers many aspects of enterprise-wide planning and access to resources on the State's wide area network. The funding derived from this assessment could start in FY2003 at approximately $300,000 and would be adjusted from there. This funding would be used to support initial operations costs including standards development. The Steering Committee is examining the possibility of a two-year trial period for this proposed source of funding, with a review to be conducted at the end of the two years. At the end of the two-year period, it is anticipated that

additional funding may be obtained from non-state agency beneficiaries of the system.

- Contracts - ***North Carolina*** has had large, repeated contracts with state agencies and much of its current funding is supported by contract work. The State Department of Transportation has funded the North Carolina CGIA (Center for Geographic Information Analysis) to the tune of over $1million per year over the past decade. These funds are used to develop data sets and perform analysis to conduct environmental and cultural assessments for highway corridor planning. Contract work is also completed for federal agencies. North Carolina's largest GIS contract client today is FEMA. The CGIA is performing flood plain mapping services including updating Flood Insurance Rate Maps (FIRMs). CGIA has also developed a voluntary assessment program where each state agency pays a different amount based on GIS infrastructure and data use by agency. In FY01 this voluntary assessment program was funded for $850,000 derived from ten agencies.
- Assessments - ***Michigan*** has also successfully funded support and development of GIS data through voluntary levied assessments on several state agencies. Funds from assessments on eight state departments are placed into an account that totals $1.1 million and is renewed each year. Three of the eight agencies have their contribution amount in their vase budget to ensure that the funds are available each year. Michigan also works on a contract basis. GIS services are delivered to specific state agencies on a project by project basis. ***Kentucky*** funds its statewide GIS activities partially through assessments on state agencies. These assessments amount to approximately $520,000 in funds per year.

- **Federal grants or matching funds** – Specific GIS initiatives (state and/or local) would be presented to the appropriate federal agency for funding. For example the US Geological Survey's NAPP program provides matching funds to develop digital ortho quarter quads (DOQQ). US Department of Justice – Office of Domestic Preparedness grants should be explored as a possible source of funding. Additionally, the FGDC (Federal Geographic Data Committee) is strongly advocating the use of GIS technology in support of Homeland Security Efforts. While there are no specific grants available at present there may be funds in the future to support homeland security measures. The following is a summary of some federal grant programs.
  - USGS Innovative Partnerships - Offers cooperative agreements under which the agency provides support (financial or non-financial) for assistance in obtaining digital elevation, vector line, orthoimage, and similar data, in USGS or compatible formats, for the public domain from non-Federal producers. A specific program is underway in Maine. As part of the NAPP program. USGS will contribute up to $1.6 million for statewide imagery. This includes $1.3 for compilation of the digital data and $300,000 for the NAPP component, which is the photo itself.

- Federal Geographic Data Committee (FGDC)[16] offers three funding programs:
    1. Cooperative agreements for projects that will establish clearinghouses to find and access geospatial data, develop standards related to geographic data, implement educational programs to increase awareness and understanding of the National Spatial Data Infrastructure, and build or strengthen relationships among organizations to support digital geographic data coordination. For 2001 there were four categories:
        a. "Don't Duck Metadata": Metadata creation and implementation assistance. $6,000
        b. "Don't Duck Metadata": Metadata Trainer Assistance $20,000
        c. Clearinghouse Integration with Web Mapping provides funding to extend existing clearinghouse nodes with OpenGIS consortium. $20,000
        d. Canadian/US Framework Collaborative Project supports a projects between an organization in the US and Canada that have an interest in basic geospatial data over a common geography. $75,000 This may be worthwhile for Maine to look into further.
    2. Framework demonstration projects that support efforts to implement and test the data, technology, and organizational aspects of the framework. Consortia propose projects in which their members work together to produce, maintain, and disseminate framework data needed for national, regional, state, and local analyses.
    3. The National Spatial Data Infrastructure (NSDI) Benefits program funds cooperative projects that assess the impact of inter-organizational cooperation and data sharing to address important issues or solve problems over a particular geographic area. Projects may focus on environmental, economic, social, or cultural problems.

- National Institute of Justice Grant program to assist units of local government to identify, select, develop, modernize, and purchase new technologies for use by law enforcement. It may be appropriate to piggy-back on E-911 work that has already been completed.

[16] These references were compiled from information on the Internet (Indiana GIS, Ohio GIS, Federal sites)

- The National Science Foundation: Grants & Awards Provides funding for research and education in the sciences, mathematics, and engineering. This funding may be appropriate for a project that partners with a college or university.

- Telecommunications and Information Infrastructure Assistance Program (TIIAP) Provides matching grants for projects that improve the quality of, and the public's access to, education, health care, public safety, and other community-based services. Grants are used to purchase equipment for connection to networks, including computers, video conferencing systems, network routers, and telephones; to buy software for organizing and processing all kinds of information, including computer graphics and databases; to train staff, users, and others in the use of equipment and software; to purchase communications services, such as Internet access; to evaluate the projects; and to disseminate the project's findings.

- National Oceanic and Atmospheric Administration (NOAA) NOAA provides funding under several grant programs for projects related to understanding and predicting changes in the coastal ocean environment and the global environment. While programs are primarily research-based, state agencies and local governments are eligible to apply, and are encouraged to partner with academic researchers.

- Environmental Protection Agency EPA's State, Local and Tribal Projects section includes programs that provide support for open space preservation, parks creation, brownfields clean up, water quality improvement, environmental protection, and pollution prevention. The Agency also offers funding opportunities related to specific geographic regions, as well as environmental management, financing, and technology.

- Department of Housing and Urban Development (HUD) HUD provides support for projects related to housing and community development, economic empowerment, and targeted housing and homeless assistance. Information about all of HUD's grant support is provided via one annual Super Notice of Funding Availability (SuperNOFA). HUD also makes available for purchase Community 2020, a desktop GIS that includes an array of U.S. Bureau of the Census geographic and demographic data and HUD program data. In addition, the software can integrate data from a range of data sources provided by the user.

- U.S. Department of Commerce The US Department of Commerce has a matching grant program for state and local governments, and non-profit organizations, supporting those infrastructure projects focused specifically on networking/communications based initiatives. The Technology Opportunities Program (TOP) is managed by the Department's National Telecommunications and Information Administration. TOP promotes

widespread use and availability of advanced telecommunications and information technologies in the public and non-profit sectors. The purpose is to help develop a nationwide, interactive, broadband information infrastructure that is accessible to all Americans in rural and urban areas.

- National Aeronautic and Space Administration (NASA) This program is focused on state, local and tribal governments. It is geared toward projects that are solution oriented and address one or more of the following application areas:

    - Resource Management
    - Environmental Assessment
    - Community Growth and Infrastructure
    - Disaster Management

  NASA seeks organizations in the U.S. that will lead the use of NASA and commercially developed remote sensing capabilities in operational activities. This grant cannot be used to fund demonstration projects that do not have a plan to reach operational status, nor projects to fund existing, on-going operational programs. There is potential applicability to land cover development to support "community growth and infrastructure" issues.

- **Other grant sources** – Other grant sources also fall into the category of mission driven funding. Grants may provide funds as well as hardware, GIS software and training services. The ESRI®-NACo grant is an example of an alternate grant source. Environmental System Research Institute (ESRI®), the leading GIS software provider in Maine, offers many grants to local and state governments. Two such grants are administered by the National Association of Counties (NACo) and supply the recipient with thousands of dollars worth of software, data access and training. ***Kansas***' Data Access and Support Center (DASC) was the recipient of a $76,000 grant from a public-private partnership organization. This grant money will be used to enable Kansas' Egovernment data portal to have spatial capabilities.
- **Local Funds** – With educational, outreach and assistance efforts, local governments and regional entities could be encouraged to help utilize some of their own funding and the private sector could also be encouraged to participate in partnerships for GIS data development and maintenance. Funding could come from whatever source the local government, business, or organization felt was appropriate, but likely sources would include areas that would benefit from a coordinated statewide GIS effort. This may include departments of public works, consulting engineers, telecommunications and other utility companies. ***Kentucky*** is requesting funds for a Local Government GIS program (LGIP) for 2003-2004. The budget request of $600,000 would be used to cerate partnership incentives for Kentucky local governments currently developing GIS data to build the data to a

statewide standard, share the data, or a subset of the data, with the state after it is created, and build the data so that adjacent counties can use each other's data. ***Virginia*** established a Public Safety Division and new Wireless E-911 Board in 2002. This board is responsible for the disbursement of funds to local communities for the implementation of Wireless E-911. The Board has ruled that communities may apply for mapping funds related to the support of E-911.

- **Cooperative Funding Partnerships** – This type of funding falls under the category of mission driven funding. It would involve cooperation among state agencies, or between state and federal agencies, to fund ongoing program costs including staff costs. The project under which this report is being prepared is an example of a cooperative funding partnership undertaken by departments in ***Maine***. The State Planning Office, Department of Transportation and the CIO jointly funded this project to explore the best course of action for further developing Maine's statewide GIS under Resolve 23. The project supports a specific "mission" however three separate agencies pooled resources to fund the project. Four separate state agencies collaborate to collectively create, maintain and distribute GIS data sets in ***Maryland.*** The Department of Planning, Department of Natural Resources, the State Highway Administration, and the Department of Housing and Community Development have coordinated the development and release of statewide GIS data both via CD-ROM and on the internet. ***Kansas*** worked with the Natural Resource Conservation Service (NRCS) of the USDA to build GIS data about soils. During one particular project, the NRCS provided a staff person to create data. The state, working in conjunction with a local university, provided some funds that were used towards data processing. Note that some cooperative funding partnerships fall under the heading of assessments in the form of voluntary assessments. Examples of theses are discussed above.

5.2 Description of a Funding Approach for Maine

5.2.1 General description

As documented above, other states use a variety of funding mechanisms to fund statewide GIS efforts. In addition it is clear that there are numerous options for funding mechanisms. It is clear that Maine will need to use a *combination* of funding vehicles to pursue the recommendations set forth in the Coordination & Implementation Plan. The following provides an overview of a potentially feasible funding *approach* for Maine:

- Pursue a **bond-funding package** for major capital investments in data and taking the Maine GIS program "to the next level". This would be used to support activities such as standards development, library infrastructure, DOQQ creation, parcel grant program, development of basic viewing and dissemination applications, and an initial education/outreach initiative.

- Focused effort and attention to **generating funds from federal and other grant sources**. Maine should establish a committee/team to apply for Federal grants and to actively work with other third-party funding entities such as utilities.
- **Creative combination of other Maine funding sources** for ongoing operational expenditures. Ultimately, the Legislature must make the decision on appropriate long-term funding for GeoLibrary operations.

The following section (5.2.2) provides a description of how project components are divided among these three general categories of funding. The next section (5.2.3) lists each of these summary funding categories and provides a listing of each project component that may be funded by each category. Finally, section 5.2.4 provides a plausible funding scenario with which the entire Resolve 23 Steering Committee found consensus.

5.2.2 Funding options by Project Component

The following describes the major task components of the Coordination and Implementation Plan while providing a basic assessment of the funding vehicles that are most appropriate to each activity.

5.2.2.1 Hardware/Software

- Bonds would be appropriate for the purchase and implementation of hardware and software to expand MeGIS's data warehousing capacity.
- CIO funding, if it is available, is another possibility for purchasing hardware and software.
- Software could also be addressed by negotiating better licensing agreements to get the most value out of licensing dollars spent.
- Maintenance is best covered from dedicated funds. Alternatively, a use fee could be charged to cover expenses. This fee could be estimated based on some percentage of hardware/software expenditures divided by estimated numbers of users and/or "hits".

5.2.2.2 Digital Orthophotos (DOQQ)

- Bonds would be appropriate for the development of DOQQs. This funding would leverage availability of matching federal funds from USGS NAPP/NDOP program.
- Should pursue partnerships with other governmental organizations and utilities for cost sharing. May enable State to get better resolution for the same investment.
- Need a plan in place to update the ortho imagery over time and as appropriate.

5.2.2.3 Parcel Data Development

- A number of municipalities have already invested in automating parcel data and eventually most will migrate to GIS. Prior to the establishment of uniform

standards, there was some value in waiting. Once Maine establishes standards, the sooner all municipalities migrate to the standard, the sooner efficiencies can be realized and better decisions can be made due to enhanced analytical capability.

- To encourage this transition to occur in time to reap the rewards and effectively address the key public concerns expressed during the Needs Assessment, the investment through bonds would be appropriate. This would be used to establish a grant program for municipalities to develop digital parcel data to state standards, and support maintenance and sharing requirements.
- Consider partnership opportunities with non-governmental users of parcel data (realtors, utilities) for parcel data development projects.
- Possible subscription fee for receiving/accessing updated parcels to fund maintenance of parcel data. Fee would need to go to municipalities to provide resources to update data. Would need to provide service beyond supplying public information.

5.2.2.4 Standards and Metadata

- Bond funding could be used for initial standards development by a consultant, including stakeholder outreach and involvement.
- CIO funding, if it is available, is another option for funding initial standards development.
- Federal grants are available from FGDC for standards development and education about standards and meta-data.

5.2.2.5 Technical Assistance

- Bond funding is not an appropriate long-term strategy for technical assistance, but could be used to hire contractors to develop an initial training/consulting program.
- Dedicated funds are most appropriate option for long-term technical assistance. It is likely that at least to one person on the state payroll would be made available to oversee technical assistance services to ensure that needs are being met.

5.2.2.6 Application Development

- Bond funding is appropriate for initial application development
- Federal grants for specific applications that serve multiple state stakeholders, led by MeGIS/Executive Committee.
- Service level agreements as are in place now.
- Fee for use if a web based application is developed/hosted/maintained on state server/with state data for use by private sector.

5.2.2.7 Staff/Maintenance

- Dedicated funds are the best, most stable, option for supporting the staff necessary to oversee all elements of a statewide GIS program. Need coordination even if development work is contracted out.
- Could explore a staff sharing agreement with different state agencies. Have those departments that can benefit most from GIS contribute to fund up to several staff positions. The benefit would be coordination of data development efforts, technical coordination, and leverage for federal funding.

5.2.3 Project Components associated with Funding Options

The following describes the three general funding categories introduced in section 5.2.1 and lists the project components that would be most appropriately funded by each funding category:

5.2.3.1 New 2002 Bond Funding Package

Bonds are appropriate for funding the startup of a statewide program as well as major capital expenses such as data development. They could be used for:

- Hardware and software improvements for warehousing technology and infrastructure
- Consulting support for standards development
- Consulting support for outreach and training for municipalities, COGs, counties.
- Data development (matching funds for USGS NAPP DOQQ program)
- Grant program(s) to local government, COGS and GeoService Centers for the development of digital parcel, zoning and protected open space data.
- Application development

5.2.3.2 Federal Grants, Other Third-Party Funds and Local Matching Funds

Federal funding would be given based on the merits of proposals made by the state and or local or regional governmental organizations, and would need to be used for the specific purposes indicated in the proposal. Appropriate requests for Federal grant dollars are:

- Warehouse enhancements
- Standards Development that is consistent with Federal Geographic Data Committee (FGDC) Information Systems standards
- Metadata development
- Outreach and training
- Data development (e.g. USGS funding for DOQQs)
- Application development that would benefit the Federal Government agency to which the request is made (e.g. homeland security, US-EPA, etc.).

This funding would be acquired based on agreements with public and private organizations in Maine and could include:

- Agreements with utilities for co-funding of data sets of mutual interest (e.g. parcels)
- Local government matches of state dollars to provide local data sets such as parcels and zoning.
- Agreements for maintenance of data stored in the library by local governments.

5.2.3.3 Operational Funding

It is assumed that the GeoLibrary Board and Legislature will come up with a suitable combination of funding sources to provide operational staffing and management of the GeoLibrary. In addition to funding staff, this is the best funding mechanism for other routine expenditures such as maintenance of hardware, software and data.

5.2.3.4 User/Cost of Dissemination Fees

Ultimately, the GeoLibrary will contain suitable resources that may warrant the institution of user fees, or "cost of dissemination" fees for data as outlined in the draft legislation. This would not take place until the latter years of the Coordination & Implementation Plan's 5-year time horizon. Even then, it is unlikely that these types of fees would amount to significantly more than $100,000 per annum. Thus, these should be considered, at best, a minor funding source. User fees/dissemination would most likely be collected to contribute to the operational funding of the GeoLibrary.

5.2.4 Recommended Funding Scenario

The following presents the most plausible funding scenario for initiating the work described in the Coordination & Implementation Plan. The Resolve 23 Steering Committee has actively examined multiple funding options and there is **unanimous consensus** among Steering Committee members that the following reflects a supportable, realistic and achievable funding path for enhancing Maine's geographic information infrastructure going forward.

- **New 2002 Bond:** Pursue a $6 million bond-funding package for major capital investments in data and taking the Maine GIS program "to the next level". This would be used to support standards development, library infrastructure, DOQQ creation, parcel grant program, development of basic viewing and dissemination applications, and an initial education/outreach initiative.
- **Third-Party Funding Sources:** Focused effort and attention will be paid to generating funds from federal and other grant sources. This includes a program to capitalize on the $1.6 million potentially available through USGS's NAPP/NDOP program. Further, Maine should establish a committee/team to apply for other Federal grants and to harvest the maximum amount of available funding. This committee/team could also actively work with utilities in Maine to attempt to generate further collaborative funding for parcels and/or land base. Last, several

elements of the bond are considered “grant programs” to municipalities. Some of these grants would require matching funds from municipalities thus further leveraging the money from the bonds.

- **Use of Enterprise Network Services Rate (ENSR)** rate increase for initial funding of ongoing operational expenditures. The Department of Administration and Financial Services (DAFS) has given preliminary approval to raise the ENSR to create a funding stream for initial operating costs of establishing the GeoLibrary. Based on an increase to ENSR of $2/month/computer effective July 1, 2002, it is estimated by DAFS that potentially $300,000 would be raised during FY2003 and another $600,000 would be raised during FY2004. Approval for an increase in the ENSR was given for a probationary 2-year period. Following the 2-year period the GeoLibrary Board will need to work with DAFS and the Legislature on a longer-term funding strategy that may include an extension of the ENSR rate increase, the institution of user fees and/or alternative funding mechanisms.

The scenario described above is further illustrated in Tables 5-2 and 5-3, below. Table 5-2 presents the funding elements according to potential funding sources. Table 5-3 illustrates the proposed scenario over a 5-year period, showing estimated expenditures by fiscal year. The program components listed in the table are discussed in detail in Section 2.2 of this document.

Table 5-2

5-Year Budget for Expanded GIS in the State of Maine

Estimated Expenditures by Funding Type

ONE TIME CAPITAL EXPENDITURES:	TOTAL Cost	Bond	CIO (1)	USGS Matching Grant	Utility or Other Partnerships	Potential one-time grants	Potential Grant Sources
1. Standards							
Statewide data standards development	$200,000	$100,000				$100,000	FGDC for standards/metadata; and/or US-Canada framework
2. Data warehousing							
Infrastructure improvements	$200,000	$200,000					
3. Statewide data development							
Participation in **USGS NAPP program for new orthophotography**. Program would complete 1997-1998 mapping and initiate more detailed mapping for a 2003-2004 program **(2)**.	$4,200,000	$1,800,000		$1,600,000		$800,000	Farm Service, NRCS, US-EPA
Development of statewide **land cover**	$750,000	$250,000				$500,000	NASA
Parcel automation grant program	$3,500,000	$2,000,000			$500,000	$1,000,000	Municipal match for parcel moneys. Assumes $1 to $1 match **(3)**.
Zoning & conservation/open space automation grant program	$750,000	$750,000					
Road centerline improvements	$400,000	$400,000					
4. Facilitating application development							
Standards conformity validation tools/application	$100,000	$100,000					
On-line Internet-browser based access to Library and application development platform for delivery of Library data to third parties	$150,000	$150,000					
Development tracking application development	$250,000	$250,000					
GRAND TOTAL ONE-TIME EXPENDITURES	**$10,500,000**	**$6,000,000**	**$0**	**$1,600,000**	**$500,000**	**$2,400,000**	

Table 5-2 *continued*

ONGOING, RECURRING OPERATIONAL EXPENDITURES:	TOTAL 5-Year Cost	FY2003 (4)	FY2004 (4)	FY2005 (5)	FY2006 (5)	FY2007 (5)
2. Data warehousing (6)						
Ongoing infrastructure support: staff, H/S maintenance, disk storage **(5)**	$1,200,000	$100,000	$200,000	$300,000	$300,000	$300,000
5. Outreach, education, and coordination (6)						
Active, directed staff support for inter-governmental and intra-governmental coordination, education & outreach **(6)**	$1,200,000	$100,000	$200,000	$300,000	$300,000	$300,000
Coordination, technical assistance and outreach through funding of Regional Service Centers (eventually 10 Centers @ $40,000 per annum) **(6)**	$1,500,000	$100,000	$200,000	$400,000	$400,000	$400,000

5-YEAR GRAND TOTAL, all investments, all funding sources:	**$14,400,000**
Potential investments from grants or funding matches:	**$4,500,000**
TOTAL 5-YEAR INVESTMENTS BY STATE OF MAINE:	**$9,900,000**

(1) It is currently assumed that no CIO funding for GIS will be available, even though GIS is listed as an Endeavor Project. If funding is available it will be allocated across these expenses selectively.

(2) Cost to complete higher resolution flyover may exceed $3,200,000, to cover high resolution for a broad area.

(3) State will also provide some "pure" non-matching grants to organizations that already have parcel data that only needs conversion into the statewide standard format.

(4) FY2003 and FY2004 would be funded through **Enterprise Network Service Rate** and library dissemination fees.

(5) To be determined following 2-year program evaluation.

(6) Assumes that all operational support of expanded data warehousing and active coordination and outreach is funded through dedicated, non-bond sources. Early year investments could potentially be covered by bond funding through contracting.

Table 5-3

5-Year Budget for Expanded GIS in the State of Maine

Estimated Expenditures by Fiscal Year

ONE TIME CAPITAL EXPENDITURES:	TOTAL 5-Year Cost (1)	FY2003 (2)	FY2004 (2)	FY2005	FY2006	FY2007
1. Standards						
Statewide data standards development	$200,000	$100,000	$100,000			
2. Data warehousing						
Infrastructure improvements	$200,000	$25,000	$100,000	$50,000	$25,000	
3. Statewide data development						
Participation in **USGS NAPP program for new orthophotography**. Program would complete 1997-1998 mapping and initiate more detailed mapping for a 2003-2004 program.	$4,200,000		$2,100,000	$2,100,000		
Development of statewide **land cover**	$750,000	$50,000	$500,000	$200,000		
Parcel automation grant program	$3,500,000	$100,000	$500,000	$750,000	$1,150,000	$1,000,000
Zoning & conservation/open space automation grant program	$750,000		$100,000	$300,000	$200,000	$150,000
Road centerline improvements	$400,000		$400,000			
4. Facilitating application development						
Standards conformity validation tools/application	$100,000		$75,000	$25,000		
On-line Internet-browser based access to Library and application development platform for delivery of Library data to third parties	$150,000		$100,000	$50,000		
Development tracking application development	$250,000			$50,000	$75,000	$125,000
GRAND TOTAL ONE-TIME EXPENDITURES	**$10,500,000**	**$275,000**	**$3,975,000**	**$3,525,000**	**$1,450,000**	**$1,275,000**

Table 5-3 *continued*

ONGOING, RECURRING OPERATIONAL EXPENDITURES:	TOTAL 5-Year Cost	FY2003 (3)	FY2004 (3)	FY2005 (4)	FY2006 (4)	FY2007 (4)
2. Data warehousing						
Ongoing infrastructure support: staff, H/S maintenance, disk storage	$1,200,000	$100,000	$200,000	$300,000	$300,000	$300,000
5. Outreach, education, and coordination						
Active, directed staff support for inter-governmental and intra-governmental coordination, education & outreach	$1,200,000	$100,000	$200,000	$300,000	$300,000	$300,000
Coordination, technical assistance and outreach through funding of Regional Service Centers (eventually 10 Centers @ $40,000 per annum)	$1,500,000	$100,000	$200,000	$400,000	$400,000	$400,000

5-YEAR GRAND TOTAL, all investments, all funding sources:	**$14,400,000**
Potential investments from grants or funding matches:	**$4,500,000**
TOTAL 5-YEAR INVESTMENTS BY STATE OF MAINE:	**$9,900,000**

(1) Total expenditures from all potential funding sources, including state, federal govt., utility partnerships and local government matches.

(2) It is assumed that funding from a calendar year 2002 bond would not become available until the second half of fiscal year 2003 (i.e. Spring 2003). Hence, expenditures from the bond begin modestly at the tail-end of FY2003 (e.g. late-Spring 2003) and ramp up in earnest during FY2004.

(3) FY2003 and FY2004 would be funded through **Enterprise Network Service Rate** and library dissemination fees.

(4) To be determined following 2-year program evaluation.